AMENDMENTS TO THE CLAIMS

Pursuant to 37 C.F.R. § 1.121 the following listing of claims will replace all prior versions, and listings, of claims in the application.

Claim 1 (Currently Amended): An electrode for an electro-surgical operation device, comprising:

a hollow electrode formed in a hollow tube shape extending from a closed tip;

a first non-insulation area formed to a predetermined length from the closed tip;

a first insulation area formed on an outside surface of the hollow electrode beginning at the predetermined length from the closed tip;

a refrigerant tube, having a smaller diameter than a diameter of the hollow electrode, inserted into the hollow electrode, the refrigerant tube configured to circulate refrigerants by supplying ~~supply~~ refrigerants from outside of a living body into the hollow electrode ~~resulting~~ to cool a living tissue in contact with at least one of the closed tip ~~and/or~~ and the hollow electrode, and ~~further configured to externally discharge~~ by discharging now heat-exchanged refrigerants ~~from the living tissue through a gap between the refrigerant tube and the hollow electrode~~ out of the living body;

at least one first hole formed on [[the]] an outside surface of the first non-insulation area;

the at least one first hole operable to externally discharge a portion of the circulated refrigerants ~~supplied through the refrigerant tube~~ into the living tissue in contact with the closed tip

and/or the hollow electrode; and

a flow control mechanism formed on the outside surface of the first non-insulation area, and operable to act as a discharge resistance to the refrigerants discharged from the at least one first hole, so as to control a flow of the refrigerants.

Claim 2 (Canceled)

Claim 3 (Currently Amended): The electrode of claim 1, further comprising:

a saline solution pipe ~~inserted onto~~ sheathing around the outside surface of the hollow electrode with a predetermined gap, and having a second non-insulation area at another predetermined length toward the closed tip and a second insulation area on [[the]] an outside surface of the saline solution pipe except the second non-insulation area;

the saline solution pipe operable to infuse a saline solution through the gap, and discharge the saline solution through at least one second hole formed on [[the]] an outside surface of the second non-insulation area.

Claim 4 (Currently Amended): The electrode of claim 3, wherein the hollow electrode and the saline solution pipe are conductive so that power is differently applied thereto~~, further comprising:~~

~~a power source operable to apply different power to the hollow electrode and the saline solution pipe~~; and

an insulation member is formed on the surface of the hollow electrode and configured to prevent short circuit of the saline solution supplied through the gap between the hollow electrode and the saline solution pipe.

Claim 5 (Previously Presented): The electrode of claim 4, wherein the insulation member comprises the first insulation area formed on the surface of the hollow electrode, and an insulation packing provided between the hollow electrode and the saline solution pipe.

Claim 6 (Currently Amended): The electrode of claim 1, wherein the closed tip of the hollow electrode is a conductive ~~spear head~~ spearhead, and the hollow electrode and the spearhead are incorporated with each other.

Claim 7 (Currently Amended): The electrode of claim 1, wherein the flow control mechanism is a hollow tube ~~inserted onto~~ sheathing around the outside surface of the first non-insulation area, and having a third hole on the outside surface of the hollow tube, the flow control mechanism controlling a volume of the discharged refrigerants by alternately ~~installing~~ aligning the at least one first hole of the hollow electrode and the third hole of the hollow tube~~,~~ and operating as a discharge resistance to the refrigerants discharged from the at least one first hole.

Claim 8 (Currently Amended): The electrode of claim 7, wherein the flow control mechanism is compression units [[of]] on an inside surface of the hollow tube which are formed in a

zigzag shape on a discharge passage from the at least one first hole to the third hole, and operated as discharge resistances to the refrigerants discharged from the at least one first hole, so as to control the volume of the discharged refrigerants.

Claim 9 (Currently Amended): The electrode of claim 1, wherein the flow control mechanism is a porous metal sintered body layer formed on the outside surface of the first non-insulation area;

the sintered body layer operable to act as discharge resistance to the refrigerants discharged from the at least one first hole, ~~so as to [a]~~ so as to control the volume of the discharged refrigerants.

Claim 10-14 (Canceled)

Claim 15 (Currently Amended): The electrode of claim 3, wherein the flow control mechanism is a hollow tube ~~inserted onto~~ sheathing around the outside surface of the first non-insulation area, and having a third hole on the outside surface of the hollow tube, the flow control mechanism controlling a volume of the discharged refrigerants by alternately ~~installing~~ aligning the at least one first hole of the hollow electrode and the third hole of the hollow tube~~,~~ and operating as a discharge resistance to the refrigerants discharged from the at least one first hole.

Claim 16 (Currently Amended): The electrode of claim 4, wherein the flow control mechanism is a hollow tube ~~inserted onto~~ sheathing around the outside surface of the first non-

insulation area, and having a third hole on the outside surface of the hollow tube, the flow control mechanism controlling a volume of the discharged refrigerants by alternately ~~installing~~ aligning the at least one the at least one first hole of the hollow electrode and the third hole of the hollow tube~~,~~ and operating as a discharge resistance to the refrigerants discharged from the at least one first hole.

Claim 17 (Currently Amended): The electrode of claim 5, wherein the flow control mechanism is a hollow tube ~~inserted onto~~ sheathing around the outside surface of the first non-insulation area, and having a third hole on the outside surface of the hollow tube, the flow control mechanism controlling a volume of the discharged refrigerants by alternately ~~installing~~ aligning the at least one first hole of the hollow electrode and the third hole of the hollow tube~~,~~ and operating as a discharge resistance to the refrigerants discharged from the at least one first hole.

Claim 18- 20 (Canceled)

Claim 21 (Currently Amended): An electrode for an electro-surgical operation device, comprising:

a hollow electrode formed in a hollow tube shape extending from a closed tip;

a first non-insulation area formed to a predetermined length from the closed tip;

a first insulation area formed on an outside surface of the hollow electrode beginning at the predetermined length from the closed tip;

a refrigerant tube, having a smaller diameter than a diameter of the hollow

electrode, inserted into the hollow electrode, the refrigerant tube configured to circulate refrigerants by supplying ~~supply~~ refrigerants from outside of a living body into the hollow electrode ~~resulting~~ to cool a living tissue in contact with at least one of the closed tip and~~/or~~ the hollow electrode, and ~~further configured to externally discharge~~ by discharging now heat-exchanged refrigerants ~~from the living tissue through a gap between the refrigerant tube and the hollow electrode~~ out of the living body; and

a refrigerant discharging mechanism formed in the first non-insulation area, operable to externally discharge a portion of the circulated refrigerants ~~supplied through the refrigerant tube~~ into the living tissue in contact with at least one of the closed tip ~~and/or~~ and the hollow electrode, by acting as a discharge resistance to the refrigerants, so as to control a flow of the refrigerants.

Claim 22 (Currently Amended): The electrode of claim 21, further comprising:

a saline solution pipe ~~inserted onto~~ sheathing around the outside surface of the hollow electrode with a predetermined gap, and having a second non-insulation area at another predetermined length toward the closed tip and a second insulation area on [[the]] an outside surface of the saline solution pipe except the second non-insulation area;

the saline solution pipe operable to infuse a saline solution through the gap, and discharge the saline solution through at least one second hole formed on [[the]] an outside surface of the second non-insulation area.

Claim 23 (Currently Amended): The electrode of claim 22, wherein the hollow electrode and the saline solution pipe are conductive so that power is differently applied thereto~~, further comprising:~~

~~a power source operable to apply different power to the hollow electrode and the saline solution pipe~~; and

an insulation member is formed on the surface of the hollow electrode and configured to prevent short circuit of the saline solution supplied through the gap between the hollow electrode and the saline solution pipe.

Claim 24 (Currently Amended): The electrode of claim [[4]] 23, wherein the insulation member comprises the first insulation area formed on the surface of the hollow electrode, and an insulation packing provided between the hollow electrode and the saline solution pipe.

Claim 25 (Previously Presented): The electrode of claim 21, wherein the refrigerant discharging mechanism is a porous metal sintered body formed in the first non-insulation area;

the sintered body operable to act a discharge resistance to the refrigerants supplied through the refrigerant tube, so as to control the volume of the discharged refrigerants.

Claim 26 (Currently Amended): A method for an electro-surgical operation comprising:

inserting an ablation device including at least one electrode into a wanted region in a living body; and

~~proceeding a radio-frequency ablation at~~ ablating the wanted region with RF energy, when ~~relatively much refrigerant is supplied from the~~ refrigerants are circulated between outside of the living body and [[into]] inside the electrode so as to cool a living tissue in contact with the electrode and ~~relatively little refrigerant discharges~~ a portion of the circulated refrigerants discharge from the electrode into the living tissue due to a discharge resistance to the refrigerants.

Claim 27 (Currently Amended): The method of claim 26, wherein the discharged refrigerant is ~~a portion of refrigerant supplied~~ additionally supplied into the living tissue through at lest one different channel from a channel for circulating the pressurized refrigerants so as to cool the living tissue.

Claim 28 (Canceled).